



March 18, 2020

Via Email and U.S. Mail

Ms. Heather Dock
Pennsylvania Department of Environmental Protection
Southcentral Region
909 Elmerton Avenue
Harrisburg, PA 17110-8200

RE: Unanticipated Bypass from Secondary Treatment

Dear Ms. Dock:

On Monday, March 9, 2020 at 4:28 a.m., a partial power outage occurred at Capital Region Water's Advanced Wastewater Treatment Facility (AWTF), rendering all equipment at the primary treatment end of the AWTF inoperable and requiring an unanticipated bypass of the secondary treatment process. Facility operations staff immediately called the Operations Supervisor to report the issue, who then additionally called the facility electrician to report for duty as soon as possible.

Upon arrival at the plant site at approximately 5:10 a.m., an inspection of the main plant switchgear equipment was performed by the plant electrician. It was determined that both incoming power feed lines were active, indicating that the electrical failure was internal. Further inspection revealed that a protective relay for the main plant breaker No. 2 had tripped. The protective mode had prevented the automatic transfer switch from activating to re-energize the primary end of the treatment plant. The relay was reset by our electrician at 5:33 a.m., restoring power back to the primary end of the treatment facility.

The equipment outage included the settled sewage pumping station, which conveys flow from the effluent end of the primary settling tanks to secondary biological treatment. In this situation, flow continues to enter the facility from our pumping stations but cannot be pumped to secondary treatment and begins to fill the available freeboard in the primary clarifiers.

The tanks continued to fill as staff awaited resolution of the electrical problem. With the tanks in imminent danger of overflowing onto the facility grounds, plant operators were forced to open the blending gate at 5:02 a.m. After resolution of the electrical problem at 5:33 a.m., the gate was subsequently closed at 5:35 a.m.



The total time of the unanticipated bypass of the secondary treatment process was 33 minutes. During this time, all flow entering the facility received treatment through ¼-inch fine screening, grit removal, primary treatment for settleable solids and floatables removal, and disinfection through chlorination. A 30-minute pre and post averaging of influent flow was used to estimate the total volume bypassed from secondary treatment at 320,100 gallons.

An investigation into the cause of this electrical failure revealed that a motor for a hot water recirculation pump in the Primary Digester had failed. This resulted in electrical surging past the unit's Federal Pacific breaker, which had no surge protection, and tripped the main breaker at power center No. 1. This chain of events activated the protective relay to protect the remainder of the facility's electrical systems.

The Federal Pacific breaker that lacked surge protection had been scheduled for replacement through the AWWF's ongoing Primary Digester Rehabilitation Project. This replacement was executed immediately following the incident. The new breaker includes proper surge protection which will prevent a widespread power outage if a similar incident were to occur in the future.

If you have any questions regarding this incident, or if additional information is required, please do not hesitate to contact me.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Jess Rosentel".

Jess Rosentel

Director of Wastewater Operations

cc: CRW CEO & Directors (Via Email)